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ELEVENTH REPORT ON INTERNATIONAL LIABILITY FOR INJURIOUS CONSEQUENCES ARISING OUT OF ACTS NOT PROHIBITED BY INTERNATIONAL LAW

by

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INTRODUCTION

1. The Commission provisionally adopted three paragraphs of article 2 on the use of terms in the draft, designating them (a), (b) and (c). The first paragraph refers to the risk of causing significant transboundary harm, the second defines "transboundary harm" and the third gives a definition of "State of origin". The designation of the various paragraphs of article 2 should be changed. Paragraph (a) would become paragraph 1, paragraph (b) would become paragraph 2, and paragraph 3 would contain a definition of "harm" and would be subdivided into three subparagraphs on: (a) harm to persons; (b) harm to property; and (c) harm to the environment. This would be followed by a paragraph 4, defining environment, and a paragraph 5 on entitlement to remedial action for harm to the environment.

2. In his eighth report, 1/ the Special Rapporteur made some progress in considering the issue of harm, as a contribution to article 2. He refers to what was said in that report as an introduction to the issue of harm, which he proposes to develop here. He has nothing to add to the comments made in that report on the subject of harm to persons or things, except for some drafting changes to the proposed article. Of these, the most important is the inclusion of the concept of loss of earnings, since this would make the text clearer. It should also be made clear, although it is perhaps implicit, that subparagraphs (a) and (b) also apply to harm to persons or things caused by environmental degradation, in order to make a clearer distinction between harm caused individually to persons and things, even if caused by environmental degradation, and harm to the environment per se. In the first case, the person entitled to remedial action is the person harmed, either directly or through environmental degradation. In the second case, harm to the environment per se is harm caused to the community when environmental values are harmed and as a result the community is deprived of use and non-use services, as we shall see below.

I. HARM TO THE ENVIRONMENT

3. On the other hand, some comments - and even a new text - should be added concerning harm to the environment, a concept which is vital to the issue under discussion. In this connection, the 14 May 1993 Communication from the Commission of the European Communities to the Council and Parliament and the Economic and Social Committee: Green Paper on Remedying Environmental Damage says:

> "A legal definition of damage to the environment is of fundamental importance, since such a definition will drive the process of determining the type and scope of the necessary remedial action - and thus the costs that are recoverable via civil liability. Legal definitions often clash

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1/ A/CN.4/443, paras. 41 to 51.

with popularly held concepts of damage to the environment, yet are necessary for legal certainty." 2/

4. Harm to the environment has been included in some international conventions, drafts and judgements, such as article 2(7)(d) of the 1993 Lugano Convention (Council of Europe Convention on Civil Liability for damage resulting from activities dangerous to the environment), confirmed by article 1(c) of the United Nations Economic Commission for Europe (ECE) Convention on the transboundary effects of industrial accidents, article 1(2) of the 1992 ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and the 1985 EEC Directive; 3/ article 8(2)(a), (b) and (d) of the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA); and article 9(c) and (d) of the Convention on Civil Liability for Damage Caused during Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels (CRTD), to which must be added the directives proposed by the ECE Task Force on Responsibility and Liability regarding Transboundary Water Pollution and the draft protocol on liability to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal being prepared by a working group appointed by the parties to that Convention. 4/ Security Council resolution 687 (1991) is of particular interest: "Iraq ... is liable under international law for any direct loss, damage - including environmental damage and the depletion of natural resources - or injury to foreign Governments, nationals and corporations as a result of its unlawful invasion and occupation of Kuwait". The issue has also been the subject of studies and has been included in some documents drafted by study groups and working groups, for instance, in article 47 of the draft Convention on Environment and Development of the International Union for the Conservation of Nature (IUCN) and in the research project conducted by the Universities of Sienna and Parma and sponsored by the Italian Council for Scientific Research. 5/ Furthermore, harm to the environment has become punishable under the domestic laws of a number of countries, such as Norway, Finland, Sweden, Germany, Brazil and the United States.

1. Definition of environment

5. After further reflection, based on some of the work mentioned in the preceding paragraph, the Special Rapporteur considered the possibility of incorporating a definition of environment into the draft articles, since there

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2/ Communication from the EC Commission to the EC Council and European Parliament on Environmental Liability, COM(93) 47, p. 10.

3/ OJ L175, 5 July 1985, p. 40.

4/ Ad Hoc Working Group of Legal and Technical Experts to Consider and Develop a Draft Protocol on Liability and Compensation for Damage resulting from Transboundary Movements of Hazardous Wastes and their Disposal. See article 2(a)(iii), (iv) and (v) (document UN/CHW.2/3, p. 10).

5/ A Group of Experts was established to cooperate in the project, focusing on liability for environmental damage caused by military activities.

is at present no universally accepted concept of environment: elements considered to be part of the environment in some conventions are not in others. The definition of environment will thus determine the extent of the harm to the environment; and the broader the definition, the greater will be the protection afforded to the object thus defined, and vice versa.

6. Such a definition does not necessarily have to be scientific and, until now, the definitions that have been tried have simply enunciated the various elements they consider to be part of the environment. According to the green paper of the Commission of the European Communities:

> "Regarding the definition of environment, some argue that only plant and animal life and other naturally occurring objects, as well as their interrelationships, should be included. Others would include objects of human origin, if important to a people's cultural heritage." 6/

A restricted concept of environment limits harm to the environment exclusively to natural resources, such as air, soil, water, fauna and flora, and their interactions. A broader concept covers landscape and what are usually called "environmental values" of usefulness or pleasure produced by the environment. Thus, one speaks of "service values" and "non-service values"; for instance, the former would include a fish stock that would permit a service such as commercial or recreational fishing, while the latter would include the aesthetic aspects of the landscape, to which populations attach value and the loss of which can cause them displeasure, annoyance or distress. It is difficult to put a value on these if they are harmed. Lastly, the broadest definition also embraces property forming part of the cultural heritage.

(a) The restricted concept of environment

7. CRAMRA defines the Antarctic environment when it attempts to describe harm to the environment:

> "'Damage to the Antarctic environment or dependent or associated ecosystems' means any impact on the living or non-living components of that environment or those ecosystems, including harm to atmospheric, marine or terrestrial life, beyond that which is negligible or which has been assessed and judged to be acceptable pursuant to this Convention."

This text indirectly defines environment through harm to the environment and has two distinct elements: one relating to the Antarctic environment and "its dependent or associated ecosystems", which the text limits to "living or non-living components of that environment or those ecosystems", including atmospheric, marine and terrestrial life; and the other relating to the threshold: the text refers to damage "beyond that which is negligible" or which has been "assessed and judged to be acceptable pursuant to this Convention". In the first instance, the concept of protected environment appears to be

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6/ COM(93) 47, p. 10.

restricted to ecosystems and natural resources such as air, soil and water, including the living components of sea, land or air. To clarify the aforesaid concept, let us say that for the Convention on Biological Diversity (article 2, "Use of Terms") "ecosystem means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit".

8. A number of other international instruments mix elements characteristic of the environment with others that are not clearly defined or do not belong in a general concept of environment. Article 1(a) of the so-called LRTAP Convention (Geneva, 1979) on Long-Range Transboundary Air Pollution, in defining such pollution, refers to "deleterious effects" on living resources and ecosystems, human health and material property, as well as interference with amenities and other legitimate uses of the environment. Obviously, living resources and ecosystems and also amenities and other legitimate uses are either components of the environment or else environmental values that may or may not be turned into amenities. "Material property" and "human health", on the other hand, do not seem to form part of the same concept. As we shall see, material property without any additional quality such as that of belonging to "cultural heritage", for instance, could not be considered to be related to the environment; nor, logically, could human health.

9. The United Nations Framework Convention on Climate Change, in defining the "adverse effects of climate change", explains that they are "changes in the physical environment or biota resulting from climate change which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare". The 1985 Vienna Convention for the Protection of the Ozone Layer uses similar language, except that it does not mention socio-economic systems or human welfare. Here, too, the former Convention includes elements of a strict concept of environment mixed with other, extraneous ones, namely, socio-economic systems and human health.

10. As far as international practice is concerned, the proposal by the Commission of the European Communities for a Community directive on damage caused by wastes defines harm to the environment as significant and persistent interference with the environment caused by a change in the physical, chemical or biological conditions of water, soil and/or air where this is not considered damage within the scope of paragraph (2)(c) (which refers to damage to property). 7/

(b) Broader concepts

11. Article 2(10) of the 1993 Lugano Convention contains a non-exhaustive list of components of the environment which includes: "natural resources both abiotic and biotic, such as air, water, soil, fauna and flora and the interaction between the same factors; property which forms part of the cultural heritage; and the characteristic aspects of the landscape". Article 1(c) of the

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7/ COM(89) 282.

ECE Convention on the Transboundary Effects of Industrial Accidents refers to the adverse consequences of industrial accidents on "(i) human beings, flora and fauna; (ii) soil, water, air and landscape; (iii) the interaction between the factors in (i) and (ii); material assets and cultural heritage, including historical monuments". Article 1(2) of the ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes says that "effects on the environment include effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; they also include effects on the cultural heritage or socio-economic conditions resulting from alterations to those factors".

12. Decision 7 of the United Nations Compensation Commission established by the Security Council in its resolution 687 (1991) in connection with Iraq's liability for damage caused in the Gulf War considers certain elements subject to compensation when, in its paragraph 35, it says that payments will be available with respect to direct environmental damage and the depletion of natural resources ... [which] will include losses or expenses resulting from:

(a) Abatement and prevention of environmental damage, including expenses directly relating to fighting oil fires and stemming the flow of oil in coastal and international waters;

(b) Reasonable measures already taken to clean and restore the environment or future measures which can be documented as reasonably necessary to clean and restore the environment;

(c) Reasonable monitoring and assessment of the environmental damage for the purposes of evaluating and abating the harm and restoring the environment;

(d) Reasonable monitoring of public health and performing medical screenings for the purposes of investigation and combating increased health risks as a result of the environmental damage; and

(e) Depletion of or damage to natural resources.

It is noteworthy that subparagraphs (c) and (d) refer to costs which are not negligible and which normally are not included in definitions of harm, although they may of course be granted by a court as part of the damage caused by the degradation of the environment.

(c) Factors to be excluded

13. All the above could benefit from being set out more methodically. To begin with, the definition of "environment" should exclude those factors that are already included in the traditional definitions of harm, such as anything that causes physical harm to persons or to their health, whether directly or as a result of environmental damage, since these are protected by the traditional concept of harm and do not require additional protection. This was the idea suggested by article 24 of the sixth report, which separated harm to the

environment from resulting harm to persons or property in the affected State. 8/ It is the same sense as can be found in the 1993 Lugano Convention, article 2 (7) of which excludes from the definition of environmental damage set forth in subparagraph (c) loss of life or personal injury and loss of or damage to property, which are dealt with, respectively, in subparagraphs (a) and (b).

14. Some doubt exists as to whether to include certain other factors or elements in the concept of "environment". One of these is the reference to a kind of "cultural environment", which covers monuments and other structures of value as expressions of the cultural heritage of a group of people. The Special Rapporteur does not mean to detract from this value by suggesting that such structures should not be included in the concept of "environment" for the purposes of compensation. It should be excluded, first of all, because of the risk of broadening the concept of environment indefinitely by introducing disparate concepts; although there is no need for a rigorously scientific definition of the human environment - which may not even exist - an effort should be made to find a definition which contains a unitary criterion, such as the natural environment. Secondly, there is a perhaps more convincing argument that such property is already protected through the application of traditional concepts of damage, obviating the need to include them in the definition of environment. None the less, a court faced with the difficult task of evaluating the amount of compensation to award for damage to a monument of great cultural value is unlikely to find any criterion to help it in the concept of environmental damage. Damage to a monument may or may not be the result of the degradation of the natural environment, but it should be compensated in any case, as soon as the cause has been duly determined.

15. The "characteristic aspects of the landscape" appear to be "values" rather than components of the natural environment and therefore should not be included in its definition. While it is true that these physical characteristics are not created by human beings, such characteristic aspects are in some sense "culturized" objects, since they are worth something in so far as they embody the aesthetic "baggage" of a given population. Rather than a component of the environment, such as water or soil, they appear to be a treasured value or aspect of the environment which would otherwise be deprived of international protection. Their destruction, therefore, would give rise to uncompensated damage.

16. As for human health, the Special Rapporteur feels that it should in no way be included as part of the environment, nor should damage to health, either directly or through harm to the environment, be considered environmental damage. Of course, a specific feature of a certain environment, such as a health spa or a sulphurous mud bath, might be its healthful effect on human beings. It is this "service value" which should be compensated if it is lost.

8/ A/CN.4/428, annex, p. 49.

2. Harm to the environment

17. Having tentatively but not exhaustively defined the elements of the environment, the Special Rapporteur turned to what was meant by harm to the environment. He drew attention to two questions in that regard: first, who is the party injured by environmental damage and, secondly, what does this harm consist of?

18. On the question of the injured party, it is clear that damage is harm caused to someone. Thus it is always damage to someone, to a person or to a human group; it cannot occur in a vacuum. For jurists, the difficulty arises when the subject of harm to the environment per se is discussed, as if the adverse effect on the environment were sufficient to constitute a juridical injury, whether or not natural or juridical persons exist who might be harmed by it. Confusion also arises if account is taken of the extremist position of some environmentalists, who consider environmental protection as an end in itself, and who believe that species and natural resources should be respected for their "intrinsic" value, i.e., independently of their valuation by human beings.

19. A closer look should be taken of the notion of the "intrinsic" value of the environment, which has been gaining some ground. Article 3 of the 1991 Protocol on Environmental Protection to the Antarctic Treaty recognizes and attempts to protect "the intrinsic value of Antarctica, including its wilderness and aesthetic values". 9/ A similar mention is also made in the Convention on Biological Diversity, in the first paragraph of the preamble, which reads as follows: "Conscious of the intrinsic value of biological diversity ...". According to the Diccionario de la Real Academia Española, intrinsic means "essential", and the Concise Oxford Dictionary defines intrinsic as "belonging naturally; inherent, essential, esp. intrinsic value". Roget's International Thesaurus, under the entry for "intrinsic", includes the word "characteristic". This latter definition is the real meaning of "intrinsic" as used in these legal instruments, and in any case the words "essential" and "inherent" do not mean that the adverse effects on the environment per se constitute a form of harm which is independent of human beings. It is difficult to understand who could be harmed by the loss of the ecological or aesthetic values of Antarctica if there were no human beings on the planet to appreciate them.

20. The effects of a causal chain normally do not come under the aegis of law until they are felt by a person in the legal system in question, in this case by a State or another international subject. In such cases, the law usually protects the injured person and prescribes reparation. It is at this point that the adverse effect becomes a juridical injury. Looked at closely, harm to the environment is not differentiated in any way from harm to the person or property of a juridical person, in whose favour there arises a right to reparation: the person is compensated because the change in the environment produced by a certain conduct harms him, since he loses one or more of the values provided to him by this environment. In brief, what is called harm to the environment per se is a change in the environment which causes people loss, inconvenience or

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9/ Tratados y documentos internacionales, edited by José I. García Ghirelli (Buenos Aires, 1992).

distress, and it is this injury to people which the law protects against in the form of compensation. In any case, as mentioned above, harm to the environment per se would injure a collective subject, such as a community, which in any case would be represented by the State.

21. The values in question, whose loss gives rise to a juridical injury, produce, as mentioned above, environmental services which may or may not be used. These are called "use services" and "non-use services". As noted above, the former include the commercial or recreational use of the environment, such as the use of a watercourse for fishing, the recreational use of water for swimming, sailing, water-skiing or racing, or the use of snow in the mountains for similar sports. Non-use services might include the characteristic features of a landscape or even so-called "existence values", which are certain features of the environment for which the community would be prepared to pay simply in order to preserve them for themselves or for future generations. Obviously, some losses of service can be easily quantified; for example, commercial fishing would suffer a loss if an incident of river or lake pollution appreciably reduced the fish population. In other cases, it is more difficult to perceive the damage and even more so to evaluate it, such as when the loss of a recreational area causes moral inconvenience or frustration. However, the principle that harm which does not entail economic loss should be compensated is not a new absolute in law, as can be seen in the universal acceptance, in domestic and international law, of compensation for moral injury, which is as difficult to evaluate in monetary terms as ecological harm.

22. The second matter is to determine who is injured by ecological harm, since the environment does not belong to anyone in particular but to the world in general, or to the community. Under United States law (CERCLA, 10/ CWA, 11/ and OPA, 12/), "Congress empowered government agencies with management jurisdiction over natural resources to act as trustees to assess and recover damages ... [t]he public trust is defined broadly to encompass 'natural resources' ... belonging to, managed by, held in trust by, appertaining to or otherwise controlled by' Federal, state or local governments or Indian tribes". 13/ Under international law, a State whose environment is damaged is also the party most likely to have the right to take legal action to obtain compensation, and this right may also be granted to non-governmental welfare organizations.

10/ The Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C.A., sections 9601 et seq.

11/ Clean Water Act of 1977, 33 U.S.C.A., section 1321.

12/ Oil Pollution Act of 1990, 33 U.S.C.A., sections 2701 et seq.

13/ Excerpts from Richard B. Stewart, Natural Resources Damages (forthcoming, 1995), annex to Background Paper (Philippe Sand, Ruth Mackenzie and Ruth Kalastchi), pp. 1-2.

3. Reparation

23. By way of introduction to the topic of reparation for environmental harm, the Special Rapporteur notes that in the field of wrongful acts, the meaning of reparation in international law is expressed in the Chorzów rule, i.e., reparation must wipe out all the consequences of the wrongful act and re-establish the situation which would, in all probability, have existed if that act had not been committed. This reparation is obtained by the methods which international law has regarded as suitable, namely, restitution in kind, equivalent compensation, satisfaction and assurances of non-repetition, combined so that all aspects of the harm are covered. 14/ In brief, reparation is an obligation imposed by secondary rules as a consequence of the violation of a primary rule, and its content, forms and degrees have been shaped by international custom, as expressed by the Court in the Chorzów Factory case; the Commission is currently attempting to codify this practice under the leadership of Professor Arangio Ruiz.

24. In the case of liability sine delicto, on the other hand, the damage is produced by an act which is not prohibited by law. Therefore, the compensation is ascribed to the operation of the primary rule: it is not a reparation imposed by the secondary rule as a consequence of the violation of a primary obligation, but rather a payment imposed by the primary rule itself. As a result, it does not necessarily have to meet all the criteria of the restitutio in integrum imposed by international custom for responsibility for a wrongful act. There does not appear to be a clear international custom with respect to the content, form and degrees of payment corresponding to the damage in responsibility sine delicto, but there are some indications that it is not necessarily following the same lines as the Chorzów rule. Restitutio in integrum is not being as rigorously respected in this field as in that of wrongful acts, as illustrated by the existence of thresholds below which the harmful effects do not meet the criterion of reparable damage, as well as the imposition, in legislative and international practice, of ceilings on compensation. Both the upper and lower limitations, which were imposed for practical reasons, create a category of non-recoverable harmful effects.

25. The Chorzów rule, however, obviously serves as a guideline, although not a strict benchmark, in the field of responsibility sine delicto as well, because of the reasonableness and justice it embodies. It is true that there are differences between the circumstances of the damage produced by wrongful conduct and harm produced by legal conduct, and that these might well be treated differently from a legal standpoint; however, this distinction is drawn mainly for practical reasons, such as in order to fix an upper limit on the amounts insured, in the case of the ceiling, or to acknowledge the fact that all human beings today are both polluters and victims of pollution in the case of the

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14/ Cessation is not included because, in liability sine delicto, it does not seem to be appropriate, since its essential feature is precisely that the activity which produces the damage is lawful and continues through the payment of the appropriate compensation. Moreover, for the Commission, and erroneously in the Special Rapporteur's view, cessation does not constitute part of the concept of reparation.

lower threshold. It is evident, however, that the law must seek reparation, as far as possible, for all damages. Thus, in the conventions on nuclear material and oil pollution, an attempt was made to go beyond the ceiling by establishing funds to help approach full restitution in circumstances where compensation might reach extremely high amounts.

26. Conventions on civil liability seem to have ignored certain forms of reparation such as naturalis restitutio in order to focus exclusively on the allocation of a sum of money as a primary payment. In environmental damage, however, the most common form of payment seems to be almost the same thing as naturalis restitutio, as represented by the restoration of the damaged elements of the environment, such as reintroducing into an ecosystem members of an endangered or destroyed species which can be restored because enough members of the species exist elsewhere. Equivalent compensation, on the other hand, would primarily be directed, in the case of total destruction of a certain component, to the introduction of an equivalent component, and only if that were not possible to an eventual monetary compensation. As interpreted in the cases covered by CERCLA, CWA and OPA in the United States, monetary compensation would also be appropriate when the restoration of a certain component occurs naturally, from the time during which this resource was dying out until its full restoration. 15/

27. The method generally selected to meet this goal is restoration, or re-establishment of the damaged or destroyed resources. This is a reasonable approach, since what is most important here is to return to the status quo ante; in principle, ecological values prevail over economic values to such an extent that, unlike what happens in other fields, some domestic laws specify that the compensation which may be granted to the injured parties in certain cases should be used for ecological purposes as well. 16/ The cost of restoration or replacement of elements of the environment gives a good measure of the value of the loss. This usually varies when the costs, especially of restoration, are unreasonable in relation to the usefulness of the damaged resources, which confirms the idea that the predominance of ecological purposes is overruled only by the unreasonableness of costs. It is usually easier, however, to replace a resource, for example, to reintroduce into one ecosystem from another ecosystem a species of fish or other animal which was destroyed or suffered a loss in population because of an incident.

15/ "Second, even when restoration activities are undertaken, trustees may determine and seek recovery for interim losses in resource value ..." (Background Paper and annex, op. cit., p. 11).

16/ See R. Stewart, op. cit., p. 4: "CERCLA requires trustees to spend all damages, apart from their assessment cost, recoupment, on 'restor[ing]. replac[ing] or acquir[ing] the equivalent' of 'the natural resources damaged or destroyed'; CWA allows recovery for 'costs or expenses incurred ... in the restoration or replacement of natural resources damaged or destroyed.' OPA also requires that recoveries be spent for 'restoration, rehabilitation, replacement or acquisition of the equivalent' of 'the damaged natural resources'."

28. Restoration or replacement is thus the best form of reparation. Identical restoration may be impossible, however, in which case most modern trends allow for the introduction of equivalent elements. The Green Paper on Remedying Environmental Damage of the Commission of the European Communities states that "An identical reconstruction may not be possible, of course. An extinct species cannot be replaced. Pollutants emitted into the air or water are difficult to retrieve. From an environmental point of view, however, there should be a goal to clean up and restore the environment to the state which, if not identical to that which existed before the damage occurred, at least maintains its necessary permanent functions [...] Even if restoration or clean-up is physically possible, it may not be economically feasible. It is unreasonable to expect the restoration to a virgin state if humans have interacted with that environment for generations. Moreover, restoring an environment to the state it was in before the damage occurred could involve expenditure disproportionate to the desired results. In such case it might be argued that restoration should only be carried out to the point where it is still 'cost effective'. Such determinations involve difficult balancing as well as of economic and environmental values". 17/ Article 2, paragraph 8, of the Lugano Convention defines "measures of reinstatement" as "any reasonable measures aiming to reinstate or restore damaged or destroyed components of the environment, or to introduce, where reasonable, the equivalent of these components into the environment. Internal law may indicate who will be entitled to take such measures". One possibility is that the measures in question might be taken by anyone, and, provided that they are reasonable, should be compensated.

29. The conventions generally stop there, i.e., with compensation for measures of restoration or replacement which have actually been taken or will be taken; in the latter case, compensation is used to pay for them. What happens in the cases where restoration is impossible or when the costs of restoration are unreasonably high? In the eighth report on the topic, Professor Rest was quoted, in reference to the Exxon Valdez case, as follows: "As in this case it was impossible to clean up the oil-polluted seabed of the Gulf of Alaska ..., the Exxon Corporation [...] saved the clean-up costs. This seems to be unjust. According to the Guidelines [of the ECE Task Force on Responsibility and Liability regarding Transboundary Water Pollution], the polluter could be obliged to grant equivalent compensation, for instance, by replacing fish or by establishing a nature park". 18/ The Commission's draft article 24 had covered this situation, providing that "if it is impossible to restore these conditions in full [i.e., the status quo ante], agreement may be reached on compensation, monetary or otherwise, by the State of origin for the deterioration suffered".

30. CRAMRA adopts a similar solution in article 8 (2) (a), providing that an operator shall be strictly liable for "damage to the Antarctic environment or

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17/ COM(93) 47, p. 32, para. 5.2.

18/ Alfred Rest, "New Tendencies in Environmental Responsibility/Liability Law: the Work of the UN/ECE Task Force on Responsibility and Liability regarding Transboundary Water Pollution". Environmental Policy and Law 21 (3-4): 135 (1991), p. 137.

activities, including payment in the event there has been no restoration to the status quo ante". What is important in terms of compensation is that the court determines that these payments must be used for ecological purposes.

31. The Fund provided for in the 1969 International Convention on Civil Liability for Oil Pollution Damage has taken a restrictive position, however. The Fund pays compensation for pollution damage caused outside the ship. The first claim, which arose from the sinking of the Antonio Gramsci near Ventspils, in the former Soviet Union, on 27 February 1979, raised the question of whether this definition includes environmental harm or damage to natural resources, as advocated by the Soviet Union and others. The response from the Fund's Assembly (resolution 3 of 1980) determined that the evaluation of the compensation payable by the Fund of the Convention could not be made on the basis of abstract quantifications of the damage calculated in accordance with theoretical models. 19/ In the more recent case of the Patmos, a Greek tanker damaged off the Calabria coast in 1985, the Fund originally rejected the Italian Government's claim on the grounds of lack of documentation on the nature of the damage or the bases on which the amount of the claim had been calculated. The Italian Government took the case to the Italian courts; it was rejected in the first instance but accepted on appeal. In 1989 the Messina Appeals Court interpreted the environmental damage referred to in the Convention as "everything which alters, causes deterioration in or destroys the environment in whole or in part". The Court held that:

> "The environment must be considered as a unitary asset, separate from those of which the environment is composed (territory, territorial waters, beaches, fish, etc.). The right to the environment belongs to the State, in its capacity as representative of the collectivities. The damage to the environment prejudices immaterial values [and] consists of the reduced possibility of using the environment. The damage can be compensated on an equitable basis, which must be established by the Court on the grounds of an opinion of experts ... The definition of 'pollution damage' as laid down in article 1 (6) is wide enough to include damage to the environment of the kind described above". 20/

32. All the liability conventions also include in the definition of harm the costs of preventive measures, and any damage or loss caused by these measures. They refer to preventive measures taken after an incident to minimize or prevent its effects; these measures are defined in all the conventions as "reasonable measures taken by any person following the occurrence of an incident to prevent or minimize the damage". If the Commission prefers to use another expression rather than "preventive" for such ex post measures, perhaps "response measures" could be used, as suggested in the tenth report on the topic. In principle, the

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19/ Sands, MacKenzie and Kalatschi, op. cit., p. 45. It should be noted that the Soviet Union had assessed the damage in accordance with an abstract model. See also the article by Clara Maffei, "The Compensation for Ecological Damage in the 'Patmos' Case" in Francesco Francioni and Tullio Scovazzi, International Responsibility for Environmental Harm, chap. XVI, pp. 381-394.

20/ Idem, p. 46.

Special Rapporteur tends to favour calling them, as in all the conventions, "preventive", making the appropriate clarification either in the text or in the commentary.

33. The 1992 amendment to the International Convention on Civil Liability for Oil Pollution Damage apparently includes ex ante prevention measures, i.e., those taken before any oil spill has taken place, among the measures whose cost is recoverable, provided that there has existed a clear and present danger of pollution damage. It would appear, however, that this compensation refers to cases where, for example, the affected State or a number of persons in the affected State are forced to take certain defensive measures owing precisely to the operator's failure to take ex ante preventive measures or his total absence.

4. Assessment of harm to the environment

34. Assessment of harm to the environment raises very serious problems. Following the trend to attempt to ensure reparation for all types of damage, which is certainly reasonable, some national laws have gone quite far in their methods of evaluation, as will be seen below. Restoration does not seem to present problems of assessment, except when costs widely exceed reasonable costs in relation to the usefulness of this form of restitution in kind. The court will have to determine when this restoration exceeds a reasonable amount, and accordingly evaluate the services temporarily or permanently lost as a result of the environmental damage. It may also happen that restoration is impossible, or only partially feasible, as seen earlier, in which case the problem also arises of assessing the services of which the public - as represented by the State - is deprived, to the extent that the restoration falls short of full restoration. This assessment is usually extremely difficult.

35. The difficulty lies in knowing whether the competent court should lean towards compensation of the directly quantifiable damages, such as restoration costs, or use abstract theoretical models to quantify the loss caused by environmental damage. "In the United States, restoration of damaged environment has been described as a 'fledgling activity shot through with uncertainty and controversy'." 21/

36. Alternative methods of assessment include: the market price of the environmental resource; the economic value attributed to the environmental resource (such as landscape costing methods or hedonic pricing, as discussed below); or contingent assessment methods to measure the willingness of individuals to pay for environmental assets such as clean air or water or the preservation of endangered species. These problems of assessment arise in the United States with respect to CERCLA (1980) and OPA (1990) in relation to the competence of certain public authorities to bring an action for damage to natural resources caused by the introduction of hazardous substances or the spilling of oil, respectively. As a market price may not exist, or may not reflect the real value of the resource, for example in the case of endangered species, some economists have tried to calculate the use value of certain public

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21/ R. Stewart, op. cit., p. 48. All suggestions on this point are taken from this paper.

natural resources (i.e., the value based on the actual use of a resource, for example, for fishing) using the cost of travel or the hedonic price. Travel costing methods use the amounts spent by individuals to visit and enjoy resources as a basis for the calculation. Hedonic pricing methods take the market value added to the value of private ownership of certain amenities and seek to transpose these values to public resources with comparable values. For non-use values, such as the value an individual may place on the preservation of an endangered species, although the species may never actually be seen, a contingent valuation methodology (CVM) has been developed to measure the value by asking persons how much they would be willing to pay, for example through a tax increase, to protect a natural resource from harm. Critics of CVM suggest that a method which does not reflect a real economic behaviour and which gives inflated values cannot be relied on. 22/ It has also been said that the value of resources which are collectively significant for the society cannot be reduced to what a group of individuals is willing to pay.

37. It is easy to understand, in view of the difficulties of the alternative assessment methods discussed above, the aforementioned trend in international practice to limit reparation of environmental damage to the payment of costs of restoration, the replacement or damaged or destroyed resources or the introduction of equivalent resources where the court deems this to be reasonable. The quantification of costs provided by CVMs is too unreliable and perhaps inappropriate for a draft that aspires to become a global convention, with courts that are part of different cultures having such disparate attitudes towards the environment. However, if restoration or replacement of resources cannot be partially or fully accomplished, and real harm to the environment has occurred, it does not seem reasonable for the damage to be totally uncompensated. The court should perhaps have some leeway to make an equitable assessment of the damage in terms of a sum of money, which would be used for ecological purposes in the damaged region, perhaps in consultation with the State of origin or with public welfare bodies, without having to resort to such complicated alternative methods. Finally, it should be noted that the courts grant compensation for moral damage, which is as difficult to assess as environmental harm. How can anguish or suffering be measured?

II. PROPOSED TEXTS AND COMMENTARIES

38. The following texts are suggested:

"Harm" means:

(a) Loss of life, personal injury or impairment of the health or physical integrity of persons;

(b) Damage to property or loss of profit;

(c) Harm to the environment, including:

22/ Ibid., p. 2.

(i) The cost of reasonable measures taken or to be taken to restore or replace destroyed or damaged natural resources or, where reasonable, to introduce the equivalent of these resources into the environment;

(ii) The cost of preventive measures and of any further damage caused by such measures;

(iii) The compensation that may be granted by a judge in accordance with the principles of equity and justice if the measures indicated in subparagraph (i)

were impossible, unreasonable or insufficient to achieve a situation acceptably close to the status quo ante. Such compensation should be used to improve the environment of the affected region.

- The environment includes ecosystems and natural, biotic and abiotic resources, such as air, water, soil, fauna and flora and the interaction among these factors.

- The affected State or the bodies which it designates under its domestic law shall have the right of action for reparation of environmental damage.

39. In the commentary on harm to the environment, a distinction must be drawn between harm to the environment per se, which is an injury inflicted on the community where the right of action belongs to the State or to the bodies which it designates under its domestic law, and harm to individual natural or moral persons through environmental deterioration, as for example where someone is made ill by water pollution and must be hospitalized, or the typical case of a hotel owner who loses customers because of the deterioration of the region where the hotel is located (industrial smoke, unpleasant odours, polluted water, etc.). The comment should note that this last-mentioned type of harm is covered in paragraph 3 (a) and (b).

40. In addition, in the commentary on subparagraph (c) (i), it should be pointed out that one of the meanings of "reasonable" applied to restoration and replacement measures, or measures introducing an equivalent, is that the costs of these measures should not be excessively disproportionate to the usefulness resulting from the measure. See the Commonwealth of Puerto Rico v. Zoe Colocotroni case, decided by the United States Court of Appeals, First Circuit (628 F.2d 652 (1980)), which refers to the oil spill off the coast of Puerto Rico in 1973.

> "The national legislation in question provided that the Federal Government and states were authorized to recover costs or expenses incurred ... in the restoration of natural resources damaged or destroyed as a result of a discharge of oil or a hazardous substance. At first instance, the District Court awarded damages based, inter alia, on the cost of replacing, through biological supply laboratories, the millions of tiny aquatic organisms destroyed by the spill. The Court of Appeals vacated the District Court's decision in this respect and held that the appropriate primary standard for determining damages in such a case was the cost reasonably to be incurred by the sovereign or its designated agency to

restore or rehabilitate the environment in the affected area to its pre-existing condition, or as close thereto as is feasible without grossly disproportionate expenditures.

"Factors to be taken into account would include technical feasibility, harmful side effects, compatibility with or duplication of such regeneration as is naturally to be expected, and the extent to which efforts beyond a certain point would become either redundant or disproportionately expensive. The Court of Appeals also recognised that there may be circumstances where direct restoration of the affected area would be either physically impossible or so disproportionately expensive that it would not be reasonable to undertake such a remedy". 23/

23/ Sands, Mackenzie and Kalatschi, op. cit. p. 56.